AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions of claims in the application:

LISTING OF CLAIMS:

1. (WITHDRAWN) A process for manufacturing a coil structure for a magnetic head, comprising:

depositing an insulating layer;

depositing a photoresist layer on the insulating layer;

depositing a silicon dielectric layer on the photoresist layer;

masking the silicon dielectric layer;

reactive ion etching at least one channel in the silicon dielectric layer;

reactive ion etching at least one channel in the photoresist layer and the silicon dielectric layer, wherein the channel includes a first segment defining a first angle and a second segment defining a second angle;

depositing a conductive seed layer in the channel;

filling the channel with a conductive material to define a coil structure; and

chemical-mechanical polishing the conductive material and the conductive seed layer for the planarizing thereof.

2. (WITHDRAWN) The process as recited in claim 1, wherein the first segment of the channel is positioned below the second segment of the channel.

3. (WITHDRAWN) The process as recited in claim 2, wherein the first segment defines a beveled angle.

4. (WITHDRAWN) The process as recited in claim 3, wherein the first segment defines an angle between 70 and 85 degrees.

5. (WITHDRAWN) The process as recited in claim 2, wherein the second segment defines an angle that is substantially vertical.

6. (WITHDRAWN) The process as recited in claim 5, wherein the second segment defines an angle between 80 and 90 degrees.

7. (WITHDRAWN) The process as recited in claim 6, wherein the first segment defines an angle between 70 and 85 degrees.

8. (WITHDRAWN) The process as recited in claim 1, wherein the reactive ion etching includes $H_2/N_2/CH_3F/C_2H_4$ reducing chemistry.

9. (WITHDRAWN) The process as recited in claim 8, wherein the reducing chemistry includes $H_2/N_2/CH_3F/C_2H_4$ gas ratios of 50-100/100-200/1-3/1-10.

10. (WITHDRAWN) The process as recited in claim 8, wherein the reducing chemistry includes a pressure range of 5 to 20mTorr.

11. (WITHDRAWN) The process as recited in claim 8, wherein the reducing chemistry includes a temperature range of –30 to 0°C.

12. (WITHDRAWN) The process as recited in claim 8, wherein the reactive ion etching is carried out by an inductively coupled plasma system with a coil power including 900 to 1500 watts.

13. (WITHDRAWN) The process as recited in claim 1, wherein the reactive ion etching is carried out by an inductively coupled plasma system with a radio frequency (RF) power including 100 to 200 watts.

14. (WITHDRAWN) The process as recited in claim 1, wherein the reactive ion etching is carried out by an inductively coupled plasma system with a magnitude of a radio frequency (RF) bias including about 120V.

15. (WITHDRAWN) The process as recited in claim 1, wherein the photoresist is hard-baked.

16. (WITHDRAWN) The process as recited in claim 1, wherein the conductive seed layer includes at least one of Cu, Ta, and TaN.

17. (WITHDRAWN) The process as recited in claim 1, wherein the conductive material includes Cu.

18. (WITHDRAWN) The process as recited in claim 1, wherein the silicon dielectric layer includes at least one of SiO_2 and Si_3N_4.

19. (WITHDRAWN) The process as recited in claim 1, wherein an aspect ratio of the channel is at least 2.5.

20. (WITHDRAWN) The process as recited in claim 1, wherein the masking includes depositing another photoresist layer including an imaging photoresist layer.

21. (WITHDRAWN) The process as recited in claim 1, and further comprising removing at least part of the silicon dielectric layer.

22. (WITHDRAWN) The process as recited in claim 21, wherein the silicon dielectric layer is removed by chemical-mechanical polishing (CMP).

23. (WITHDRAWN) The process as recited in claim 1, and further comprising depositing an adhesion promoter layer between the silicon dielectric layer and the imaging photoresist layer.

24. (WITHDRAWN) The process as recited in claim 1, wherein the reactive ion etching includes CF_4/CHF_3 chemistry.

25. (CURRENTLY AMENDED) A magnetic head, comprising:

an underlying layer, the underlying layer being electrically insulating ~~layer~~;

a photoresist layer positioned adjacent ~~the insulating~~ underlying layer ~~for~~ and having two opposing sides defining ~~a at least one~~ channel; and

a coil structure ~~defined by~~ formed of a conductive material situated in the ~~at least one~~ channel;

wherein a profile of each of the sides of the photoresist layer that define the channel includes a first segment ~~defining a first angle~~ and a second segment ~~continuous~~ that is contiguous with the first segment, the first segment defining a first angle relative to a plane of deposition of the photoresist layer, the second segment defining a second angle relative to the plane of deposition of the photoresist layer, the second angle being different than the first angle,

wherein the first segment of each side of the photoresist layer is positioned below the second segment located contiguously thereto,

wherein heights of the first segments of each side of the photoresist layer measured perpendicular to the plane of deposition of the photoresist layer extends from the underlying layer to a point between 20% and 80% of a total channel height from a top of the channel.

26. (CURRENTLY AMENDED) The magnetic head as recited in claim 25, wherein the height of the first segment of each side of the photoresist layer is greater than a height of the second segment located contiguously thereto ~~the channel is positioned below the second segment of the channel~~.

27. (CURRENTLY AMENDED) The magnetic head as recited in claim ~~26~~ 25, wherein the first segments of the sides of the photoresist layer taper together towards the underlying layer ~~segment defines a beveled angle~~.

28. (CURRENTLY AMENDED) The magnetic head as recited in claim 27, wherein the first segment defines an angle between 70 and 85 degrees relative to the plane of deposition of the photoresist layer.

29. (CURRENTLY AMENDED) The magnetic head as recited in claim ~~26~~ 25, wherein the second segment defines an angle that is substantially ~~vertical~~ perpendicular to the plane of deposition of the photoresist layer.

30. (CURRENTLY AMENDED) The magnetic head as recited in claim ~~29~~ 25, wherein the second segment defines an angle between 80 and 90 degrees relative to the plane of deposition of the photoresist layer.

31. (CURRENTLY AMENDED) The magnetic head as recited in claim ~~30~~ 29, wherein the first segment defines an angle between 70 and 85 degrees relative to the plane of deposition of the photoresist layer.

32. (CURRENTLY AMENDED) The magnetic head as recited in claim 25, wherein the channel is formed by reactive ion etching, wherein the reactive ion etching includes $H_2/N_2/CH_3F/C_2H_4$ reducing chemistry.

33. (ORIGINAL) The magnetic head as recited in claim 25, wherein the photoresist is hard-baked.

34. (ORIGINAL) The magnetic head as recited in claim 25, wherein the conductive material includes Cu.

35. (ORIGINAL) The magnetic head as recited in claim 25, wherein an aspect ratio of the channel and coil structure is at least 2.5.

36. (CURRENTLY AMENDED) A magnetic head ~~manufactured utilizing a process~~, comprising:

~~depositing an insulating layer;~~

~~depositing a photoresist layer on the insulating layer;~~

~~depositing a silicon dielectric layer on the photoresist layer;~~

~~masking the silicon dielectric layer;~~

~~reactive ion etching a plurality of channels in the silicon dielectric layer using CF_4/CHF_3 chemistry;~~

~~reactive ion etching a plurality of channels in the photoresist layer and the silicon dielectric layer, wherein the channels each include a first segment defining a first angle and a second segment defining a second angle, the first and second segments being contiguous wherein a $H_2/N_2/CH_2F/C_2H_4$ reducing chemistry is utilized in channel formation;~~

~~depositing a conductive seed layer in the channels;~~

~~electroplating the channels with a conductive material to define a coil structure; and~~

~~chemical-mechanical polishing the conductive material and the conductive seed layer for the planarizing thereof~~

an underlying layer, the underlying layer being electrically insulating;

a photoresist layer positioned adjacent the underlying layer and having two opposing sides defining a channel; and

a coil structure formed of a conductive material situated in the channel;

wherein a profile of each of the sides of the photoresist layer that define the channel includes a first segment and a second segment that is contiguous with the first segment, the first segment defining a first angle relative to a plane of deposition of the

photoresist layer, the second segment defining a second angle relative to the plane of deposition of the photoresist layer, the second angle being different than the first angle,

wherein the first segment of each side of the photoresist layer is positioned below the second segment located contiguously thereto,

wherein heights of the first segments of each side of the photoresist layer measured perpendicular to the plane of deposition of the photoresist layer extends from the underlying layer to a point between 20% and 80% of a total channel height from a top of the channel,

wherein the first segments of the sides of the photoresist layer taper together towards the underlying layer,

wherein the second segment defines an angle between 80 and 90 degrees relative to the plane of deposition of the photoresist layer,

wherein the first segment defines an angle between 70 and 85 degrees relative to the plane of deposition of the photoresist layer.

37. (CURRENTLY AMENDED) A disk drive system, comprising:

a magnetic recording disk;

a magnetic head including:

an insulating layer,

a photoresist layer positioned adjacent the insulating layer, the photoresist layer having opposing sides ~~for~~ defining at least one channel, and

a coil structure defined by a conductive material situated in the channel,

wherein ~~the channel and coil structure include~~ each of the sides of the photoresist layer includes a first segment defining a first angle and a second segment defining a second angle, the first and second segments being contiguous;

wherein a height of the first segment measured perpendicular to the plane of deposition of the photoresist layer extends from the insulating layer to a point between 20% and 80% of a total channel height from a top of the channel;

an actuator for moving the magnetic head across the magnetic recording disk so the magnetic head may access different regions of the magnetic recording disk; and

a controller electrically coupled to the magnetic head.